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November 15, 2001

BY HAND DELIVERY

Julius P. Knapp, Deputy Chief
Office of Engineering & Technology
Federal Communications Commission
445 12th Street, S.W., Room 7B-133
Washington, D.C. 20554

**Re: ET Docket No. 98-153 -- Revision of Part 15 of the Commission's Rules Regarding
Ultra-Wideband Transmission Systems
*Ex Parte Communication***

Dear Julie:

You may be interested in a presentation XtremeSpectrum, Inc. made to IRAC yesterday on ultra-wideband (UWB) interference issues.¹

The longer of the two handouts -- "Presentation to IRAC of Detailed Technical Analysis of Systems Studied in NTIA Reports" -- examines in detail each of the bands about which NTIA expressed concern. The analysis covers these bands:

5.6-5.65 GHz	TDWR Terminal Doppler Weather Radar
5.03-5.09 GHz	MLS Microwave Landing System
3.7-4.2 GHz	FSS Fixed Satellite System Earth Station
2.9-3.1 GHz	Maritime Navigation Radar
2.7-2.9 GHz	NEXRAD Next Gen Weather Radar
2.7-2.9 GHz	ASR- 9 – Airport Surveillance Radar

¹ XtremeSpectrum, with 67 employees, conducts research in ultra-wideband communications systems as its sole business. XtremeSpectrum intends to become a ultra-wideband communications manufacturer once the Commission authorizes certification of such systems. XtremeSpectrum takes no position on ultra-wideband radar applications.

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1.57542, 1.2276 GHz	GPS L1 & L2 Spectral Lines
1.544-1.545 GHz	SARSAT Local User Terminal (LUT)
1.24-1.37 GHz	ARSR- 4 –Air Route Surveillance Radar
1.025-1.15 GHz	DME Transponder (Ground Station)

The accompanying analysis shows that XtremeSpectrum does not cause interference in any of these bands, even in peer-to-peer mode. ***Peer-to-peer operation does not cause interference even from outdoor UWB devices 30 meters above ground.*** A ban on outdoor tower mounting provides extra protection against any threat of interference.

Our analysis rests on the following realistic assumptions (slide 7):

- We cut emissions at GPS frequencies, as stated in our *ex parte* filing of September 10, 2001. See slide 41.
- We calculate the interfering signal necessary to cause harmful interference to a system. (NTIA, in contrast, calculates a signal level that might merely impinge on the receiver's own noise level.)
- Some radar systems receive reflections from "clutter" in the environment at levels far higher than UWB interference. We take those reflections into account.
- Interference into fixed satellite earth stations is limited by the highly directional nature of the receiver dish. We take this into account.²
- We take into account cases in which a victim system is blocked by the building that houses a UWB emitter, rather than interfered with by the emitter itself.

We also address the aggregation issue in some detail (slides 10-13). This shows, as expected, that the nearest UWB emitter dominates the analysis, with very small contributions from all others combined.

REGULATORY FLEXIBILITY. Different UWB manufacturers might resolve interference problems differently. Where XtremeSpectrum addresses GPS interference with an emissions notch (slide 41), for example, other manufacturers may prefer higher emission levels under a peer-to-peer ban. *The*

² Fixed satellite receive antennas must be highly directional in order to distinguish between satellites 2 degrees apart in the orbital arc. See 47 C.F.R. Sec. 25.209(c) (no interference protection for receive antennas that do not meet this standard).

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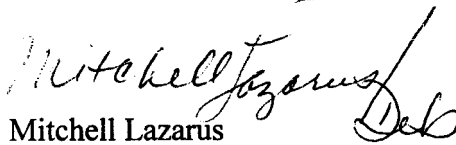
Commission should set out multiple regulatory options, each of which fully protects other spectrum users, but which allow each manufacturer to exploit its own strengths. This fosters competition and innovation by opening the market to the greatest number of technologies. Otherwise, efforts to promote competition under a single set of rules may inadvertently lock out good technologies in favor of poor ones.

I am also including the outline for our oral presentation, titled "Presentation to IRAC."

We filed both attachments in the docket yesterday.

If you have any questions about this material, please call me at the number above.

Respectfully submitted,


Mitchell Lazarus
Counsel for XtremeSpectrum, Inc.

cc Chairman Michael Powell
Commissioner Kathleen Q. Abernathy
Commissioner Michael J. Copps
Commissioner Kevin J. Martin
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